

On the Tusks of the Fossil Walrus found in the Red Crag of Suffolk. By E. RAY LANKESTER, M.A., F.R.S., F.L.S., Professor of Zoology and Comparative Anatomy in University College, London.

[Read May 6, 1880. Abstract.]

IN this communication (which will be published in full in the Society's Transactions, with illustrations) the author explains that, at the suggestion of Prof. P. J. van Beneden in 1864, he had generically named the fossil Walrus-tusks obtained from the Suffolk Crag *Trichecodon*, and that in his account of the specimens published in the Geological Society's Journal, 1865, they accordingly were denoted as *Trichecodon Huxleyi*. With more perfect specimens since at his command, he now withdraws the generic term, substituting that of *Trichechus*, desiring that the remains then and now described should hereafter be recognized as *Trichechus Huxleyi* (Lankester sp., 1865).

With further reference to the nomenclature of the fossil Walruses of the Pliocene deposits of Suffolk and Belgium, in the splendidly illustrated memoir of the fossil remains of marine Carnivora obtained from the environs of Antwerp, Prof. van Beneden describes* various bones of Walrus-like animals under two genera, viz. *Trichecodon* and *Alachtherium*. Without discussing the value of the generic characters, Prof. Lankester, nevertheless, points out that Vicomte du Bus † had previously proposed the name *Alachtherium*, and that *Trichecodon* had been preoccupied by himself (1865), *suprà*. In default of specimens showing both bones and tusks in juxtaposition, it is perfectly hopeless to attempt to identify either Prof. van Beneden's own fragment of a tusk or the Suffolk specimens with those bones which he calls *Alachtherium*, on the one hand, or with those which he calls *Trichecodon*, on the other. At the same time, should there really be only one Walrus-like animal proper to this period, neither *Alachtherium Cretesii* of Du Bus (1867), nor *Trichecodon Koninckii* of Van Beneden ‡ (1871) have priority as its title, but *Trichecodon Huxleyi*, Lankester (1865).

The conclusion then arrived at by the author, from a careful consideration of Prof. van Beneden's statements in his large monograph (1877), and from that of his shorter memoir (1871),

* Annales du Musée Royal d'Histoire Naturelle de Belgique, tome i. (1877).

† Bulletin de l'Acad. Roy. Belg. 1867, p. 562.

‡ Bull. de l'Acad. Roy. Belg. 2^e sér. tom. xxxii. p. 164.

and of Du Bus's account of *Alachtherium* (1867), is:—that there is no evidence for the association of the tusks of *Trichechus* (*Trichecodon*) *Huxleyi* of Suffolk with any one set of the bones of Walrus discovered at Antwerp rather than with any other; and inasmuch as the tusks which we now possess furnish as sound a basis for generic and specific characterization as do detached and fragmentary bones of the general skeleton, the title *Trichechus Huxleyi* should hold its place. Whilst further, if the generic term "*Trichecodon*" is to be used at all, it is applicable, not to bones which give no specific information relative to the teeth, but to the teeth themselves in the sense in which Prof. Lankester made use of it fifteen years ago at Prof. van Beneden's suggestion.

Having disposed of the question of nomenclature, Prof. Lankester proceeds to describe the fine set of large tusks of *Trichechus* (*Trichecodon*) *Huxleyi* from the Suffolk Crag, which are deposited in the Ipswich Museum. These he compares with those of the recent form of Walrus (*Trichechus rosmarus*) in the College of Surgeons Museum; and he draws certain conclusions therefrom as to absolute size, sectional diameter, curvature, fluting, and attrition of tusks at different ages and in the two sexes. He finds that in the recent and fossil canines of the Walrus there is a precisely parallel variation. He recognizes four kinds of differences of form resultant from age and sex:—1. Small tusks, almost straight, with unworn points and large pulp-cavity: these belong to young individuals. 2. Full-sized tusks, more slender and curved and with less pronounced fluting and ridges than in no. 3: these appear to belong to females. 3. Full-sized tusks not longer than the last, but less curved and more massive, and having a greater transverse diameter and a more marked grooving and ridging of the flattened sides of the tusk. 4. Short massive tusks with the pulp-cavity filled by osteodentine: these are worn-down tusks of old individuals, and exhibit a difference in girth accordingly as they have belonged to male or female.

With regard to curvature, maximum size, and fluting of the Crag Walrus as compared with the living form, while there is a certain agreement between them, the former (*T. Huxleyi*) are distinguished by their greater size and curvature, their relative lateral compression (the recent tusks of *T. rosmarus* having a more circular contour), and a somewhat deeper and more constant longitudinal fluting.

In an appendix the author reasons concerning the conditions of

growth and attrition of the Walrus-tusks. He observes that growth does not necessarily proceed *pari passu* with attrition, and consequently tusks of the same age may be of various lengths; the biggest tusks, *cæteris paribus*, will be those which have suffered least rubbing during the process of growth. The causes of attrition are not merely due to friction of the points upon ice studded with sand particles, but rather to the digging up of the sea-bottom when the Walrus is in search of mollusca, or when scraping rock-surfaces to detach limpets and such like. As regards the sea-bottom and shore, it is hardly possible to doubt that the Miocene (Diestien) sea, with its *Pyrula*, *Voluta*, *Cassidaria*, *Pholadomya*, and such forms, and its Teuthophagous whales (*Ziphioids*) and its huge sharks, was not an ice-bound sea. The Walrus' tusks, then, are only secondarily, and not primarily, related to its movements upon shore-ice. With no very hard rocks against which to wear down its tusks, the Diestien Walrus accordingly had them longer, of greater primitive curvature, and a greater lateral compression, as compared with the Walrus now inhabiting the seas of the northern regions.

On the Specific Identity of *Scomber punctatus*, Couch, with
S. scomber, Linn. By FRANCIS DAY, F.L.S.

[Read June 3, 1880.]

(PLATE VII.)

IN the 'Zoologist' for 1849, Mr. Couch described a Mackerel, which he had obtained the previous year in Cornwall, as "the Dotted Mackerel," *Scomber punctatus*. Prior to that period it had not been observed, while since that time it has remained unrecognized until April 21st this year, when I received a specimen from Mr. Dunn, of Mevagissey, in Cornwall, where it had been taken the previous day. I was exceedingly gratified at obtaining this specimen (which was uninjured and quite fresh), as I particularly wished to examine some of the species of British fish which are least known and merely doubtfully admitted to the rank of species. Pennant, 'British Zoology,' ed. 1776, and Fleming, 'British Vertebrates,' merely record the "Common Mackerel" (*S. scomber*) as existing in the British seas. Turton, 'British